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Farmers' Management Orientation: A Study in Some Selected Villages of Haor Areas of Northeast Bangladesh

M.A. Muttaleb[1], M.A. Kashem[2] and M.A. Islam[3]

Abstract

The objectives of this study were to ascertain the management orientation of farmers and to identify the contributing factors of management orientation. Data were collected from 250 farmers of 15 villages of Pukhra union of Baniachang Upazila under Habiganj district during June 2004 to February 2005. Results indicated that a great majority of the farmers (90%) had low to medium management orientation while 10% had high management orientation. Among the characteristics of the farmers, aspiration (38.03%), pest hazard awareness (07.00%), supervision of rice cultivation practices (03.50%), education (02.60%) and innovation proneness (02.10%) were identified as the best predictors of management orientation. Combined contribution of these characteristics was 53.70% to the total explained variation of 58.90%.

Keywords: *Farmers, farm management, orientation, haor*

Introduction

Declining bio-diversity, diminishing of soil productivity, over use and pollution of water along with climate change farmers are facing various problems in management of agricultural production (Olgun, 2002; Gunpat and Bakele, 2002; Daily *et al.*, 1998). Again, declining trend of land availability for crop production due to higher demands for alternative land uses, such as nature, recreation, employment and urbanization is a another severe concern in Bangladesh for sufficient food production along with scarcity of different resources e.g. fertilizers, water etc. Globalization leads to increasing pressure on the economic viability of food production systems, resulting in search for more remunerative land uses by farmers, in both the developed and developing world and the eventual abandonment of land (Breman and Debrah, 2003; Bouma *et al*., 1998). Farmers have to compete with all over the world due to liberalization and globalization of markets (Van den, 2002). Management is increasingly being recognized as a crucial factor

underlying farm operations for economic success that can vary from farmer to farmer (Brodt *et al.,* 2006). Physical and economic efficiency depends on the skill of manager that combing the resources in an appropriate and effective way (Nulthall, 2006). Hence, it is essential to increase the managerial ability of the farmers for profitable food production for proper utilization and allocation of resources under degradation and scarcity

[1] Senior Scientific Officer, Bangladesh Rice Research Institute, Regional Station, Habiganj, [2] Professor, Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh and [3] Senior Scientific Officer, Bangladesh Institute of Nuclear Agriculture, Mymensingh

situation with the challenge of globalization and climate change. Therefore, farmers need to have adequate orientation with different scientific aspects of farm management i.e. planning, production and marketing aspects to achieve optimum return from their farm enterprises. But in Bangladesh, there is dearth of information relating to farmers' management orientation specially in Haor areas. Hence, a study was designed to determine farmers' management orientation along with related factors.

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Methodology

Fifteen villages of Pukhra union of Baniachang upazila under Habiganj district were selected by multistage sampling procedure. Among the selected villages, 250 farmers were selected out of 1061. Sample size of farmers was determined with formula as quoted in Mortoza (2002). Data were collected through pre-tested interview schedule by face-to-face interview procedure during June 2004 to February 2005. Farmers' management orientation was the dependent variable and 15 selected characteristics of the farmers were considered as independent variables. The selected characteristics included: age, education, family education, family size, information sources use, supervision of rice cultivation practices, farm size, annual income, credit use, farm mechanization index, cosmopoliteness, social participation, innovation proneness, level of aspiration and awareness about pest hazards. These independent variables were measured with the available scales developed by earlier authors with necessary modification whenever needed.

Management orientation has been defined as the degree to which a farmer is oriented towards scientific farm management comprising planning, production and marketing functions of his farm. Management orientation was measured with the scale consisting of 16 items. Among these 16 items, each of 5 items were related to planning and production. On the contrary, 6 items were related to marketing. All sixteen items were arranged randomly to avoid bias response with negative and positive form. The respondent was asked to indicate his responses against each item in strongly agree, agree, undecided, disagree, strongly disagree. Weights of 5, 4, 3, 2 and 1 were assigned for strongly agree, agree, undecided, disagree, strongly disagree respectively for the positive items and reverse weights were assigned for the negative items. Overall management orientation score of a farmer was determined by adding scores for his responses to all the 16 items of the scale. Thus, management orientation score of a farmer could range from 16 to 80, 16 indicated very low management orientation while 80 indicated very high management orientation. Data were analyzed according to the objectives with Excel and SPSS packages.

Findings and Discussion

Management orientation of the farmers

Findings of Table1 indicate that the highest proportion (69.20%) of the farmers had medium management orientation while 20.80% had low management orientation and 10.00% had high management orientation. It

is evident from the Table that more than four-fifths (90.00%) of the farmers had low to medium management orientation. Management orientation facilitates the farmers in appropriate, judicious and efficient use of modern agricultural practices along with the utilization of scarce and costly resources. So, farmers with low management orientation may face problems in judicious and accurate use of agricultural practices and resources.

Table 1. Distribution of farmers according to their management orientation

Management orientation categories (scores)	Farmers		Mean	Standard deviation	CV
	Number	Percent			
Low management orientation (upto 45)	52	20.80		7.23	13.78
Medium management orientation (46 - 60)	173	69.20	52.48		
High management orientation (>60)	25	10.00			
Total	250	100.00			

Relationships between the selected characteristics and management orientation of the farmers were ascertained by Pearson's product moment co-efficient of correlation (r) and presented in Table 2. The Table revealed that education, family education, family size, information sources use, supervision of rice cultivation practices, farm size, annual income, credit use, farm mechanization index, cosmopoliteness, social participation, innovation proneness, aspiration and pest hazard awareness of the farmers had significant and positive relationship with the management orientation. But incase of age, the relationship was negative and significant. Frawley and Reidy (1986) found that age is negatively related to a growth strategy of farm, while Ilbiry (1991) found a positive effect of age. The former result is confirmed in this study indicating that younger farmers are able to make improvements on their farms than older.

Table 2. Correlation co-efficient between the selected characteristics of the farmers and their management orientation

Characteristics	Management orientation
Age	-0.139*
Education	0.480**
Family education	0.434**
Family size	0.166**
Information sources use	0.484**
Supervision of rice cultivation practices	0.439**
Farm size	0.158*
Annual income	0.160*
Credit use	0.281**
Farm mechanization index	0.378**
Cosmolpoliteness'	0.529**
Social participation'	0.545**
Innovation proneness	0.473**
Aspiration	0.619**
Pest hazard awareness	0.618**

** = Significant at 5 percent (0.05) level, ** = Significant at 1 percent (0.01) level*

Thus, it is revealed that the relationship of 14 selected characteristics of the farmers with management orientation was positive and significant (Table 2). This relationship indicated that farmers having higher level of these characteristics had better management orientation. Gunput and Bakele (2002) reported that aspiration and technical ability of the farmers positively related with successful farming. Similarly, Nuthall (2001) reported positive correlation between ambition and yield of milk. Education positively influenced technical efficiency and productivity (Burki and Terrell, 1998; Wilson *et al.,* 2001; Ondersteijn *et al.,* 2003). Nuthall (2001) indicated positive correlation between education and understanding of problems. This study also showed highly significant relationship between education and management orientation. This finding indicating the positive changes in management may be due to the better ability of higher educated farmers in measures to improve productivity.

Factors contributing to farmers' management orientation

In order to find out the relative contribution of independent variables on farmers' management orientation, multiple regression analysis was done. All fifteen variables were included in regression analysis due to their significant relationships with management orientation. Both unstandardized and standardized regression co-efficient values were computed. It was evident that the values of multiple determination coefficients (R^2) for all the fifteen independent variables jointly explained 58.90% of variation of management orientation (Table 3). The observed t values for regression co-efficient were significant in case of farmer's age, education, family size, information sources use, supervision of rice cultivation practices, credit use, farm mechanization index, social participation, innovation proneness, aspiration and pest hazard awareness.

Table 3. Summery of multiple regression analysis of the independent variables on management orientation of the farmers

Independent variables	Unstandardized Coefficients(B)	Standardized Coefficients (β)	Standard Error	t value with significant level
Age	-0.0607	-0.118	2.253	-2.232*
Education	0.423	0.219	0.027	2.924**
Family education	-0.505	-0.149	0.145	-1.898
Family size	0.877	0.225	0.266	4.245**
Information sources use	-0.157	-0.141	0.207	-1.995*
Supervision of rice cultivation practices	0.150	0.262	0.079	5.101**
Farm size	-0.086	-0.018	0.029	-0.190
Annual income	-0.007	-0.057	0.454	- 0.589
Credit use	-0.086	-0.121	0.011	-2.248*
Farm mechanization index	-0.020	-0.040	0.038	-0.673
Cosmolpoliteness'	0.110	0.050	0.030	0.709
Social participation'	0.192	0.194	0.156	2.477*
Innovation proneness	0.219	0.253	0.077	3.892**
Aspiration	0.264	0.230	0.056	2.796**
Pest hazard awareness	0.655	0.186	0.095	2.693**

*R^2 =0.589, Constant = 34.264, * = Significant at 5 percent (0.05) level*

*** = Significant at 1 percent (0.01) level*

To have an optimum model of prediction of selected independent variables on management orientation, only significantly contributed variables viz., age, education, family size, information sources use, supervision of rice cultivation practices, credit use, farm mechanization index, social participation, innovation proneness, aspiration and pest hazard awareness were included for further regression analysis. In this analysis, contribution of farmers age, education, family size, supervision of rice cultivation practices, credit use, social participation, innovation proneness, aspiration and pest hazard awareness were 56.60% variation of management orientation to the total variation of 58.90% (Table 4). It means that omitted variables jointly contributed only 2.30% variation. Individual contribution of these significant variables was ascertained by stepwise regression analysis. Among the contributed variables, aspiration of the farmers contributed highest (38.03%) in predicting management orientation followed by pest hazard awareness (7.00%), supervision of rice cultivation practices (3.50%), education (2.60%) and innovation proneness (2.10%). The remaining variables namely, family size, age and credit use combinedly contributed about 3.10%.

Table 4. Summery of multiple and stepwise regression analysis of the independent variables to management orientation of farmers

Variable	Unstandardized Coefficients (B)	Standardized Coefficients (Beta)	Standard Error	t value with significant level	% contribution
Aspiration	0.183	0.159	0.083	2.206*	38.03
Pest hazard awareness	0.837	0.238	0.228	3.666**	07.00
Supervision of rice cultivation practices	0.152	0.265	0.028	5.462**	03.50
Education	0.332	0.172	0.104	3.182**	02.60
Innovation proneness	0.195	0.225	0.045	4.319**	02.10
Family size	0.642	0.165	0.182	3.533**	01.20
Age	-0.062	-.121	.026	-2.422*	01.20
Credit use	-0.075	-.105	.036	-2.060*	00.80

R^2 = 0.566, Constant = 32.4585

** = Significant at 5 percent (0.05) level*

*** = Significant at 1 percent (0.01) level*

Conclusions

Farmers' management orientation is one of the important key factors of efficient crop production as well as profitable farming. But aforementioned findings indicate that management orientation level of the farmer were not promising. So, it is essential to improve the management orientation of the farmers in respect of production system, inputs and technology use through training and demonstration to utilize their resources efficiently by the concern extension agencies. Farmers aspiration, pest hazard awareness, supervision of rice cultivation practices, education, innovation proneness, family size,

age and credit use were found positive and significant factors of management orientation. For the improvement of farmers management ability above mentioned factors may be considered during initiation and execution of various programmes for successful farm management along with sustainable food production by the extension agencies.

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